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ELECTROLYTIC production of the chlorates formed the subject of an interesting paper in a recent issue by HENRY BLUMENBERG in which he describes a process invented and patented by himself. A practical test of the process on a large scale is about to be undertaken and the results will be awaited with much interest in the chemical world.

THE metal bismuth and its salts have recently undergone material reductions in price and the circumstance has served to direct attention to the syndicate which has for a number of years controlled the production of the metal. The *Chemist and Druggist* refers to the syndicate as a "little handful of firms" who have "unostentatiously but contentedly" battened upon the consumers of the drug. The bismuth trust have undoubtedly had things very much their own way from the start. The price of the metal has been elevated to the highest possible notch and manufacturing chemists could do nothing but submit to its (the trust's) exactions.

The present decline in prices is said to be due to certain disagreements between individual firms of the syndicate. But it is at the same time known that a good deal of bismuth is being turned out by independent producers, and it is not unlikely that bismuth preparations will reach a still lower range in the near future.

THE SARATOGA MEETING.

THIS year's meeting of the New York State Pharmaceutical Association promises to be more than usually interesting. Secretary HOLMES has just issued the official programme, from which we gather that several new features of interest are promised; chief among these being a visit to the "House of Panza," where the members will be treated by FRANKLIN W. SMITH to a descriptive lecture on the house and its antiquities. This structure is better known as the Pompeiian house and is a reproduction of the celebrated House of Panza, destroyed at Pompeii in A.D. 79. Many students of history and archæology have at different times evinced interest in this reproduction of the House of Panza and it should afford rare material for a lecture. The members will assemble at this famous memento of Pompeii at 8 o'clock Tuesday evening, the twenty-sixth.

The second day's proceedings will commence with a carriage ride to Woodlawn Park—a park reputed to have twice the area of Central Park in New York City and to be the largest private park in America; it is greatly celebrated for its fine park roads and beautiful vistas of forest and lawns; on this occasion the destination of the party will be the famous "Spouting Springs." An important part of the programme for the second day's proceedings will be a lecture on the "Rubber Industry of South America," by Prof. H. H. RUSBY of the New York College of Pharmacy. The excursion on Saratoga Lake to White Sulphur Spring is promised for the forenoon of Thursday. A light collation will be served on the boat and the outing is sure to be an enjoyable one. Besides the lectures mentioned a number of interesting papers are promised and several New York members will take prominent part.

Members residing in New York City who are thinking of attending the annual meeting should signify their intentions at once. This can be done by dropping a note to the editor of this journal, who is already in communication with a number of gentlemen who have arranged to go by water to Albany and thence to Saratoga by rail.

PHYSICIANS DISPENSING.

TO find the druggists' side of the case in the dispensing of medicines by physicians presented fairly by any journal not especially connected with the drug business is so unusual as to warrant special comment, and we therefore reproduce the following from the columns of the Washington, D. C., *Progress:*

Many of our druggists complain bitterly of an abuse that is assuming wide proportions. The big drug manufacturers of New York and Philadelphia are putting up standard prescriptions in solid tablet form, which they drum energetically among the physicians. The medicines in this form can be conveniently carried by any physician on his round of visits in large quantities or kept in stock in their offices.

Then, instead of writing a prescription, the doctors fill a little vial with tablets, cork and label it, and give it to the patient at a cost of from one to three dollars. When the bottle is empty the patient is forced to return to the doctor's for a new installment, which is only too often the same thing passed off as a new compound and charged for as a new prescription.

The evils of this abuse lie in the fact that the reliable druggist would sell the patient exactly the same thing for a quarter for which the physician charges two dollars, thus imposing upon the public and depriving the druggist of his small profit on the prescription.

Again the community suffers in that these physicians buy entirely of out-of-town wholesalers, at wholesale rates, thus sending money to other cities which would otherwise be circulated to the benefit of local trade.

Can any one fail to see the unfairness of this treatment? Yet the druggist has no protection, or even retaliation. In fact, as a rule, he is afraid to complain openly, because the doctors whom he would condemn are the men who could ruin his trade by dictating to their patients to purchase their prescriptions at another store, thus boycotting him who lifted up his voice in upbraiding.

While the subject is treated from the purely commercial point of view that side of the subject is forcibly presented and may furnish suggestions to our readers.

West India Lime.

Lime juice is obtained by compressing the fresh ripe fruits between heavy rollers. This is exported in the raw state or concentrated. The latter is obtained by evaporating the raw juice in copper or enameled iron pans until it is reduced to about one eighth or one-tenth of the original bulk. When exported it is a dark, viscid fluid of the consistence of treacle. The concentrated lime juice is not used for food purposes, but devoted entirely to the preparation of citric acid, largely in demand by calico printers. From the rind of the fresh fruits there is obtained by a hand process, called "ecuelling," a fine essence of limes exported in copper vessels. A description, with an account of the mode of using the *ecuelle* (a specimen of which was presented to Kew by Mr. Joseph Sturge, managing director of the Montserrat Company in 1892), is given in the *Kew Bulletin*, 1892, pp. 107, 108. The ecuelle is a copper basin furnished on the inside with numerous prominent studs. The instrument is held in the left hand while the fruit, taken singly, is gently rubbed with a circular motion on the studs. This action bruises the oil glands in the rind and the oil flows in small quantities to the bottom of the basin. The process is a slow one and is performed in the West Indies by women and girls. The task per day is measured in fluid ounces. By distilling the raw lime juice a spirit is obtained known as oil of limes. The essence of lime extracted by hand is far more valuable than the oil of limes. The perfume of the latter is injuriously affected by the heat necessary in distillation.

A recent and somewhat full account of the lime industry at Montserrat and Dominica is given by Mr. Consul Galbraith in the United States Consular Reports, December, 1892, pp. 519–522. As these reports are not easily accessible in this country, the following brief summary is given on points not already touched upon: The area under lime cultivation at Montserrat in 1892 is estimated at "1,200 acres, of which about 900 acres are in fruit-bearing trees." The orchards in Dominica are smaller, and with one or two exceptions, the same care is not exercised in the cultivation of the trees, nor in the manufacture of the juice. "The largest crops are gathered in years in which the rainfall is heaviest. The average yield of fruit from an orchard in full bearing would be about 60 to 80 barrels (an ordinary flour barrel is employed in all orchards to gauge the quantity of fruit) from an acre per annum. . . . A barrel of fruit will yield from six to seven gallons of juice, and each gallon of sound ripe juice contains from 12 to 15 ounces of citric acid." Raw lime juice is preserved in casks and shipped chiefly to the London market. The manufacture of concentrated lime juice consists in boiling the juice in open pans until reduced to about one-tenth of its volume; "it is then a black, viscid fluid containing from 80 to 100 ounces of citric acid per gallon. . . . Concentrated lime juice is principally shipped to the New York market."

Green limes are exported to a small extent only, and to the English market. Pickled limes, in salt water or brine, are invariably sent to Boston. "The average shipments of products of the lime tree from Montserrat for the last five years were as follows: Raw lime juice, 800 puncheons of 120 gallons each; concentrated lime juice, 200 casks of 54 gallons each; green limes, 1,000 boxes; pickled limes, 300 barrels: essential oil, 2,500 pounds."—*Kew Bulletin.*

Pharmaceutical Education.*

By James Kennedy, Ph.G., M.D.,

Professor of Pharmacy and Dean of the Faculty of the School of Pharmacy of the University of Texas.

The practice of pharmacy has ever been closely linked with medicine and from the very nature of things must continue to be. In fact the existence of pharmacy as a separate profession dates from a comparatively recent period, whereas the art of medicine is as old as the world.

In ancient times when the art of medicine was veiled with superstition the physicians prepared their own medicines and consequently the pharmacist proper had no existence in those days.

To-day, however, the art of medicine rests upon the secure foundations which has been built for her from the truths of Science. She no longer depends upon the flimsy superstitions of past ages, nor does she accept the traditional inheritance of the healing guild without first subjecting them to the crucial tests imposed by the laboratories of Science. The labors of the anatomist, the physiologist, the experimental therapeutist, and last, but by no means least, the pharmaceutical chemist have all contributed towards formulating a rational system of medicine and eliminating the disgusting remedies of the dark ages of medical practice. Instead of using such potent medicaments as the liver of a fat dog, the dried fæces from the same animal, body vermin, snake flesh and skins, human fat and the like, to-day, we are using remedial agents, the chemical and therapeutic properties of which have been determined by scientific investigation. We no longer compel our patients to swallow boluses and drafts of filth anointed with superstition, whose degree of potency depends upon the performance of cabalistic or religious rites, but instead we administer to them elegant and palatable remedies which are furnished us by the pharmacist's subtle art.

In order to be successful in the practice of pharmacy to-day, one must not only be well versed in both ancient and modern lore of pharmacy, chemistry, materia medica and botany, but must know the market quotations on asafœtida and alcohol, quinine and castor oil, baking powder and calomel, epsom salts and chamois skins, rhubarb and rhigolene, bi-sulphide of carbon and oil of cologne, and countless thousands of other heterogeneous things. He must know how to differentiate a Cuban from a domestic cigar, be able to distinguish a Japanese from an American, French or English tooth-brush, in short he must have the names, buying and selling prices of all known drugs, chemicals, patent medicines, toilet articles and a thousand other unclassifiable commodities ever at his finger and tongue's end and among the personal attributes which a druggist is supposed by an over fastidious public to possess is the appearance of a Beau Brummel, the manners of a Chesterfield, the patience of a Job and the piety of a parson.

It must be evident to you, gentlemen, that no training school can meet all of the requirements which seem to be at the present demanded in the practice of pharmacy nor is it at all likely that such an institution will ever be able to meet the demands until a separation of the mercantile features from *pure* pharmacy has been effected. I predict that such a separation will occur in the near future—indications seem to point that way. I believe that those who desire to follow pharmacy as a profession will outrival their more sordid brethren who follow pharmacy as a trade and force them into purely mercantile lines. Holding as we do these views we have deemed it proper to eliminate from our discussion the mercantile features of pharmacy. The colleges of pharmacy have been doing noble work, and the people are now educated up to the point of appreciation and insist that their prescriptions be compounded and dispensed by a graduate of pharmacy.

The great work of pharmaceutical education was first begun in this country in 1821, when the College of Apothecaries was organized. This institution was incorporated in the following year under the name of The Philadelphia College of Pharmacy, which is the oldest college of pharmacy in the United States, then followed New York City, Baltimore, Chicago, St. Louis, Ann Arbor and Boston. The foregoing institutions were organized between 1822 and 1867. The character of the work done by these schools was evidently appreciated and their claims to an existence established, for their success has continued unabatingly and has stimulated the organization of other colleges of pharmacy, so that at the present time we have more than forty institutions teaching the disciples of Galen the mysteries of his art.

Among the pioneers in the teaching of pharmacy may be found the illustrious names of Parrish, Maisch, Bridges, Bedford, Markoe, Scheffer, Diehl and Procter. Their labors have borne fruit, the seed which they sowed has passed through the transitional stages of unfolding and blossoming, and has matured and ripened into a beneficent blessing to mankind.

The first question with which we have to deal in pharmaceutical education is the preliminary training of the student. It must be obvious that unless he has already acquired a fair elementary education it will not be possible to teach him the various branches of science which go to make up a pharmaceutical education. If he is unfamiliar with the science of etymology, and a stranger to orthography, it is not at all likely that he will be able to make satisfactory progress in the study of either chemistry, physics, materia medica or botany.

Unless he possesses some knowledge of arithmetic he will not be able to understand those truths of chemical science represented by the terms atomicity, valens, etc., and consequently will fail to master it. To say nothing of his being unable to calculate the percentage, strength of solutions of medicinal substances, or the amount of active ingredient contained in each dose of a given prescription—calculations that the practical pharmacist is called upon to make many times daily.

It is clear then that the student of pharmacy *must possess a good common school education*, and by this we mean that he must be able to read, write and spell correctly; he must be familiar with elementary arithmetic, possess a fair knowledge of geography and the rules of grammar.

* From a paper read at the annual meeting of the Texas Pharmaceutical Association and communicated by the author.

Rapid and Perfect Staining of Gonococci.

Lanz suggests, in the *Apotheker Zeitung*, the following method, which the editor of the *National Druggist* can recommend from personal experience:

The secretion is spread on the coverglass and fixed by heat in the ordinary way, only care should be taken not to

overheat. It is then placed in a 20 per cent. aqueous solution of trichloracetic acid, and left there from 30 seconds to one minute. The secretion takes on, almost immediately, a white appearance. It is then slightly rinsed with clear water and the superfluous moisture removed by the aid of bibulous paper. The cover-glass is again passed through the flame two or three times to fix the secretion, and it is then floated, charged surface downward, on a methyl-blue solution, prepared as follows:

In a capacious test tube mix 30 cubic centimeters of distilled water and 1 or 2 drops of liquor potassæ, and add saturated alcoholic solution of methyl-blue until the mixture assumes a dark blue color.

Leave the cover-glass in contact with this solution from 2 to 5 minutes (the reaction rarely requires the latter length of time.—Ed. *Nat. Drug.*), remove, rinse well and let dry. The preparation may be mounted in balsam or dammar, or it may be examined at once in glycerin.

In this mode of preparation the cocci do not appear so large as when the older process is used, but their contours are far more neatly and sharply brought out, the cocci appearing deep blue, while the cellular material shows up much lighter, and of a matt or cloudy color. If desired, eosin may be used as a contrast color, but care must be taken to use it sufficiently diluted. Thus double-stained, the gonococci remain deep blue, but the cellular elements take on a rosy hue.

Very fine effects are produced by placing the cover-glass, after staining with methyl-blue, as directed, and rinsing in a weak aqueous solution of Bismarck brown, and leaving it in contact from 15 to 30 seconds. On examination, after rinsing, etc., the cellular protoplasm will show up greenish brown, the nuclei the same color but more pronounced, while the gonococci will remain dark blue, or, if left long in the dark brown solution, a dark blue-brown. The gonococci stand forth remarkably sharp and distinct in the latter case, and with good objectives have almost a stereoscopic distinctness.

After trying all other processes, the editor of the *National Druggist* gives the last one the preference.

Balsam Copaiba Tests.

The following important circular on balsam copaiba has been issued by Stallman & Fulton of this city, who invite the co-operation of the trade in the matter discussed:

The arrivals of this article, from direct sources, during the year 1891 amounted to 2[illegible]5,480 pounds; in 1892, 185,280; in 1893, 80,000, and the firs four months of 1894 about 27,000.

The consumption has not materially decreased, yet in spite of the greatly diminished imports the price has not advanced. The cause of this is not far to seek, and we call attention to the fact that hardly any balsam copaiva goes out now into the trade unadulterated, even from some of the most reputable houses, while it is claimed to be pure. These adulterations have of late grown to such an extent that it terations have of late grown to such an extent that it it is time to call a halt; buyers should not only buy of strictly reliable houses, but examine and test every package they receive.

The principal adulterant is gurjun balsam (E. I. Wood Oil), which has been imported here of late from England to an alarming extent. Among other adulterants are mineral oil, castor oil, etc. Gurjun balsam can readily be detected by holding the suspected sample in the sun or a strong light; the presence of gurjun balsam is indicated by a greenish violet tinge.

Hager's test is as follows: To 2 cc. of a mixture of 1 part pure sulphuric acid and 25 parts pure acetic ether add 4 drops of the balsam to be tested; after a few minutes the mixture will assume a violet hue, if a large percentage of gurjun balsam be present, and on standing for about 12 hours will change to a dark brown to black color; in small admixtures of gurjun the violet tinge will not be pronounced, but on standing for above named length of time will also partake of a dark brown color.

Paraffine oil, liquid paraffine or vaseline oil can be detected by the following test, devised by the Lheloux Chemical Laboratory of New York, viz.: Put 30 drops of the balsam in a test tube, adding 3 to 4 times their volume of 95 per cent. alcohol, shake well together, then hold the tube suspended in boiling water until the contents begin to boil; if paraffine oil is present it will appear separated from the mixture at the bottom of the vial, the balsam being held in a clear or milky solution by the alcohol.

Pure balsam copaiba of all varieties excepting Para, mixed with an equal volume of aqua Ammonia, will make a clear transparent solution and will more readily do so when heated; if gurjun balsam, Venice turpentine or castor oil is present in the copaiba, the mixture, after standing for, say 12 hours, will remain either wholly or partly cloudy. It is necessary to take ammonia water, the same results not being obtained with stronger ammonia. Owing to the large percentage of oil copaiba which is present in Para balsam, the above test is not applicable to this grade. We believe other tests can be devised, and we invite further investigation. Considerable quantities of balsam copaiba, especially the Para kind, have frequently been deprived of most of the oil of copaiba by distillation and put on the market again as pure balsam, but really defective in quality.

Toothache Cures.

Main Nichol, in a communication to the *Dental Record*, advocates some new remedies for the various forms of toothache. The dull, constant aching due to periosteal inflammation is, he thinks, more effectually relieved by means of a comparatively fresh aconite leaf than by the tincture of aconite, the former having greater strength and more persistent action. The gum over the inflamed root being dried, a piece of the leaf of suitable size is cut, and this is simply pressed into place, where, as a rule, it may remain as long as a capsicum plaster. Leaves may be kept moist in a tin box with a tight fitting lid, in the interior of which is a damp sponge. In pyorrhœa alveolaris a common symptom is an intense itching, almost akin to pain and perhaps more intolerable, provoking a constant desire to rub the gums. This pruritis readily disappears with the employment of a solution of one of the essential oils—notably peppermint—used as a mouth wash or tooth-brush tincture. Where pulps are acutely inflamed Mr. Nichol advocates the heroic treatment of drilling into them with the dental engine, and maintains that the relief obtained more than compensates for the pain of the operation.—*Chemist and Druggist.*

Queries and Answers.

We shall be glad, in this department, to respond to calls for information bearing on pharmacy or any of its allied topics, and cordially invite our friends to make use of this column.

When sending for the formula of an unusual, patented or proprietary compound, the query should be accompanied with information regarding the locality in which it is used, its uses, and reputed effect. When it can conveniently be done, a specimen of the label used on packages of the compound should also be sent.

Prescription Incompatibility.—J. U. B. writes, "Some days ago I compounded the following:

Bismuth subnit	℥	vi
Acid carbolic	gtts.	lx
Listerin	℥	ij
Cordial q.s.	℥	viii

"I compounded this and after shaking thoroughly I uncorked the bottle to allow the accumulated gas to escape, corked it again and set it aside for some time. Upon handling the bottle there was an explosion sufficient to blow the cork some distance away.

"The cordial contains soda bicarb. and the conclusion I came to was that chemical decomposition ensued between the bismuth subnit. and the sodium bicarbonate. Was bismuth oxide formed?"

No. The trouble in this case is due in all probability to a reaction between the acids contained in the listerin (boric and benzoic) and the sodium bicarbonate of the cordial. Alkaline carbonates are sometimes subject to decomposition in the presence of bismuth subnitrate, especially when the bismuth salt has been improperly washed and contains traces of free acid, but the result is not the formation of an oxide of bismuth. The reaction is probably at an end with the consumption of the free acid.

Dr. Miles' Cure.—G. E. G. requests information concerning the composition of "Dr. Miles' new cure for the heart."

We have no information concerning this article. Perhaps some one or more of our readers will be able to communicate a note on the subject.

Attfield's Chemistry. H. S.—A new American edition of this manual is promised shortly by the publishers, Lea Brothers, Philadelphia.

Aromatic Vinegar. F. H.—A great variety of formulas for acid acetic aromatic are in use. We cull the following from our note-book.

I.

Oil of mace	3 drams
Oil of rosemary	3 drams
Oil of lavender (English)	6 drams
Camphor	4 ounces
Glacial acetic acid	2 pints

Mix.

Mallard's toilet vinegar is said to have the following composition:

II.

Oil of lavender, Oil of rosemary, Tincture of musk āā	20 minims
Oil of neroli	25 minims
Oil of lemon	3 drams
Oil of bergamot	3 drams
Oil of orange peel	4 drams
Tincture of benzoin	12 drams
Tincture of tolu	12 drams
Glacial acetic acid	24 ounces
Alcohol	4 pints

Mix.

III.

Oil of citron	1 dram
Oil of cloves	1 dram
Oil of bergamot	10 drops
Oil of cinnamon	10 drops
Oil of thyme	20 drops
Oil of lavender	40 drops
Glacial acetic acid	8 fl. ounces

Mix.

Combined Toning and Fixing-bath. J. M.—The following will be found useful:

Soda hyposulphite	8½ ounces
Citric acid	2 drams
Lead acetate	3 drams
Ammonia sulphocyanide	7 drams
Alum	2 drams
Gold chloride	15 grains
Water	14 ounces

Mix.

Cod Liver Oil and Malt Extract. A. E. A. B.—There is a good formula for the above in the National Formulary. Another formula of recent construction reads as follows:

Cod liver oil	150 parts
Water	50 parts
Scale pancreatin (soluble)	1 part
Sodium chloride	2 parts
Sodium bicarbonate	1 parts

Dissolve the pancreatin along with the salines in the water, digest at a temperature of about 90° F. for three hours, stirring occasionally. Put 200 parts of any good commercial extract of malt in a mortar, add the pancreatized oil gradually, and flavor with oil of pimento, quantity sufficient.

Quiz Box.

This series of questions will be continued each week. The answers to each series of questions will appear thein issue for the fourth week following their publication. All of our readers are invited to compete for the prizes named below.

Replies must be in our hands within three weeks after the appearance of the questions. The names of all making an average of 75 per cent. will be published each week.

Address Editor Quiz Box, 37 College place, New York.

FIRST PRIZE.—A new Dispensatory, latest revised edition, will be awarded to the person who makes the highest general average of answers for the *entire* series of questions as published from March 22 to June 28, 1894.

SECOND PRIZE.—Copies of Harrop's "Monograph on Flavoring Extracts" will be awarded to the three persons who make the next highest general average for the entire series of questions.

THIRD PRIZE.—A copy of Heebner's Manual of Pharmacy and Pharmaceutical Chemistry will be awarded to the person sending in the most satisfactory replies to any three sets of questions, but who does not win either of the other prizes.

FOURTH PRIZE.—A copy of Lloyd's "Elixirs" will be awarded to every person who sends in an answer to *every one* of the questions published in the series, making an average of 66 per cent.

Answers to Questions; Eleventh Series.

121. The change in volume of a gas, produced by a given change of temperature, is called the coefficient of expansion and is generally expressed as a fraction of the original volume. When using centigrade degrees the coefficient of expansion is $\frac{1}{273}$, that is (starting from zero) every change of 1° in temperature, above or below 0°, produces a change of $\frac{1}{273}$ of the original volume. For Farenheit degrees it is $\frac{1}{273} \times \frac{5}{9}$ or $\frac{1}{491}$. 100° change is an increase of $\frac{100}{273}$ in volume or 273 liters + $(\frac{100}{273} \times 373) = 372$ liters, the space 273 liters of oxygen will occupy when heated from 0° to 100°, if the pressure remain uniform.

122. There are two forms of barometer, one containing a liquid, generally mercury, called the Toricellian barometer, from the Italian who made the first barometer. The other barometer has a metal box from which the air has been removed, leaving a vacuum, with a flexible head or cover which moves in and out with changes in the outer pressure, this form of barometer is known as the Aneroid.

The Toricellian barometer may be made as follows: Procure a straight glass tube about 32 inches long; put a little mercury into it and by inclining the tube see if the mercury occupies the same length of the tube at every part. If the portion of mercury was one inch long at the beginning it should have that length at every part of the tube, if it shortens the tube is of greater diameter, if it lengthens of less diameter. In this way we select a tube of the same uniform bore from end to end. One end is now closed by softening, in a bunsen or other smokeless flame, and pressing the sides together. Fill the tube with pure mercury and gradually apply heat, beginning at the open end, until the mercury boils, then suddenly invert the open end, holding a pad of leather over it for the purpose, into a small dish of boiled mercury. It will be noticed that the mercury in the tube will fall, leaving a space between it and the upper end of the tube, until it stands at a level of about 30 inches above the surface of the mercury in the small dish or reservoir. The tube and reservoir are now supported in a perpendicular position, generally fixed to a smooth board. Back of the upper end of the tube is placed a scale of wood, metal or paper graduated in millimeters or inches and subdivisions, which, for convenience in reference, are sometimes indicated by numbers and the arbitrary terms, fair, rain, etc.

The action of the instrument is dependent upon the pressure of the air that rests upon the surface of the mercury in the reservoir. This pressure is transmitted by the mercury to that in the tube and therefore lifts and holds it up. The space between the upper end of the tube and the level of the mercury in the reservoir, depending upon the length of the tube, is then almost a perfect vacuum and there is, therefore, no pressure from above upon the column of mercury. The pressure is all from below and will raise the mercury until the weight of the column is equal to the pressure that is bearing upon it, it makes no difference whether the tube is one inch in diameter, or one foot, the pressure per equal area will be the same.

If the atmosphere which produces this pressure was always the same in weight per cubic foot, it would always push the column up to the same height, but, as a fact, the weight of the atmosphere is continually changing and the column must follow these changes, standing high when pressure is greater and falling as the pressure diminishes. Correction must also be made for changes in temperature. There are several causes for the change in weight of the atmosphere at any place. Vapor of water is lighter bulk for bulk, than air, the more vapor of water the air contains, the lighter it is. As we go up above surface of the earth, we leave some of the layers of air below us and thus have less air to press the column up. If the wind blows across a valley, it may, like the blast of air from the atomizer, produce a partial vacuum, when the column will fall.

There are two principal uses of the barometer: to aid us, with the help of other instruments, to predict the weather and to determine the relative elevation of different points, such as mountain tops, etc. The principles involved in these uses are given in describing the action of the barometer.

123. Diffusion of gases is that property in virtue of which they thoroughly mix, even in opposition to the force of gravity. A heavy gas carbonic acid gas, put below a light gas, hydrogen will rise, and the light one will fall until they are uniformly mixed. It is shown in mixing of the light and heavy gases in our atmosphere and the consequent purification of the air. It is also shown in the action which takes place in our lungs where the gases intermingle, in both these cases the same gases are concerned, carbonic acid gas and oxygen and nitrogen. The general rule of gaseous diffusion is that, the dense gases diffuse more rapidly than the lighter ones, the rate of diffusion varying inversely as the square root of the densities

124. Isaac Newton discovered that "every body in the universe attracts every other body with a force directly in proportion to the product of the masses and inversely proportioned to the square of the distance between the centers of gravity.

The running of water in streams or the falling of a snowflake are caused by gravitation as also are the motions of the heavenly bodies in space.

Cohesion is that particular form of attraction which, acting at insensible distances, holds like molecules together.

Cohesion holds the molecules of zinc together and also those of iron, and the reason iron is stronger than zinc is, because the force of cohesion is greater between its molecules than between those of zinc and lead.

Adhesion is that force which, acting at insensible distances, holds unlike molecules together. Lead pencil marks are caused by the adhesion of the graphite (black lead) to the paper, and glue holds two pieces of wood together by adhering to them.

125 A crystal is a solid body, usually bounded by plane surfaces arranged symmetrically, according to definite laws. The plane surfaces by which a crystal is bounded are its faces, the line formed by two faces intersecting is an edge, and the inclination between two faces at an edge is the angle. With but few exceptions every crystal is so constructed that every edge, face or angle on one side, has its representative on the other side. Crystallization may be effected in three ways: by solution (sugar), by fusion and slow cooling (roll sulphur), by vaporization (flowers of sulphur). Crystals grow by a constant addition of new layers of material upon their exposed sides or surfaces. It is found that, through every crystal straight lines called axes can be drawn about which the matter of the crystal is symmetrically developed.

By the number, relative length, position and inclination to one another of these axes, crystals are distinguished.

126. The six principal groups or systems of crystals, founded upon the relation of their axes, are as follows: Regular or cubical, tetragonal, hexagonal, rhombic, monoclinic, and triclinic.

Regular or cubical crystals have three axes of equal length, at right angles and crossing at the center.

Tetragonal crystals have three axes at right angles, two of equal length, the other one differing from these.

Hexagonal crystals have four axes, three of equal length in the same plane inclined at an angle of 60° to one another, and the fourth at right angles to them.

Rhombic crystals have three axes of unequal lengths at right angles.

Monoclinic crystals have three axes, two at right angles to each other and the third or main axes at right angles to one and inclined to the other.

Triclinic crystals have three axes all inclined to one another.

127. When a liquid comes into contact with a solid which it is capable of wetting (alcohol and glass) it is found that, at the place of contact the liquid will rise above its general level. If it cannot wet the solid (mercury and glass) it will be depressed at the place of contact below the general level. These effects are most apparent when the liquids are confined between surfaces near together, such as sheets of paper, glass, etc., or in very fine tubes, and from the fact it was first observed in small, hair-like tubes it was called capillary (capillus, a hair) attraction. It is known to be merely one form of adhesion. It is necessary to make proper allowance for capillarity in measuring liquids in graduates or pipettes or an error will be introduced. The action of blotting paper is due to capillarity.

128. Osmosis. When two liquids of different densities are separated by a porous partition, it will be found, after a varying interval of time, that the liquids are perfectly mixed even in opposition to gravitation. The result is to liquids what diffu-

sion is to gases and is called liquid diffusion or osmosis.

Under the name of dialysis it has been used, within recent years, to separate crystalloids from colloids. Crystalloids are those substances which will form crystals, sugar, common salt and other salts.

Colloids are amorphous substances which form more or less glue-like masses when moist, such as glue, gelatin, gum and starch.

If we had a mixture containing gum arabic, common salt, sugar and water and should put it into a glass dish having a bottom of parchment paper or bladder, and then hang this dish into another dish of pure water, we would find after a little time had passed that the water in the outer dish would taste of the salt and sugar, but chemical test would fail to reveal more than a trace of the gum; after the lapse of a few hours the sugar and salt would thus be almost entirely separated from the other constituent. It is found that two currents are set into motion, the one which goes to the denser fluid is called the endosmosic current and the other is called the exosmosic current. In pharmacy we prepare ferrum dialysatum by this method and in nature it is the supposed cause of the ascent of sap in the trees.

129. Newton's Laws of Motion: (1) Every body continues at rest or in uniform motion in a straight line unless compelled to change that motion by some external force. (2) Every motion or change of motion is in the direction of the force impressed and is proportional to it. (3) Action and reaction are equal and opposite in direction.

130. Energy is the ability to overcome resistance, but this ability may exist without being exercised. Energy, which is doing or moving, or overcoming resistance through space is called kinetic, while energy that is stored up, or has the power to do although not yet doing, is called potential. These energies are convertible one into the other and their sum is always the same quantity. We can exchange kinetic energy for potential or potential for kinetic, but we can destroy neither.

Names of Students Whose Grade Stood 75 on the Eleventh Series.

James Banks, Mifflintown, Pa. H. J. Barber, Alton, Ontario, Canada. J. C. Boyer, Wiconisco, Pa. T. H. Brenneman, Harrisonburg, Va. W. E. Bruce, Boston, Mass. J. W. Brewer, Lake Ponsten, S. Dak. G. E. Barkesdale, Richmond, Va.

Miss Maude Florence Cain, Lancaster, Pa.

J. C. Dague, Fredericktown, Ohio. F. L. Dolan, Freeman, Mo. T. J. Derrberry, Centreville, Tenn. H. J. Force, Newark, N. J.

William E. Gokay, Bennington, Vermont. Max A. Goltz, Winona, Minn.

Frank Hartmann, Middletown, Conn. Frank L. Harwood, Warren, Mass. Seymour Hull, Hoosick Falls, N. Y. G. C. Hodges, Utica, N. Y. Chas. W. Hyde, Sharon, Pa.

A. M. Leine, Honesdale, Pa. Jno. Lohmann, Jr., Edwardsville, Pa. Nicholas N. Lawery, Schenectady, N. Y. Henry Lampard, Montreal, Canada. H. G. Lavalle, Gouverneur, N. Y.

C. J. McCloskey, Jersey City, N. J. John F. Marr, Chillicothe, Ohio. F. H. Mayo, Mulhall, Pa. F. L. Mills, Boston, Mass. Thomas W. Murphy, East Bradey, Pa. John R. Murray, Centreville, Tenn. W. B. Nethery, Toronto Junction, Ont.

Edward L. Page, Lancaster, Pa. J. H. Pratt, Birmingham, Ala.

A. V. Rand, Wolfville, N. S.

Aber Y. Smith, Clarksburg, W. Va. Clarence O. Snavely, Lebanon, Pa. Moses W. Somers, Boston, Mass. W. E. Smurl, Parsons, Pa. W. A. Sickel, Snow Shoe, Pa. W. Scallin, Mitchell, S. ak.

Howard B Thomas, Syracuse, N. Y. J. W. Thomas, Jr., Norfolk, Va.

W. H. Van Strander, Winsted, Conn.

Bertie Ward, Orange, N. J. H. A. Woodward, Plainfield, N. J. Frank M. Wayne, Rochester, N.Y.

Questions, Fourteenth Series.

PHARMACOGNOSY.

References: "Principles of Pharmacognosy," by Flückiger and Tschirsch, translated by Power; also chapters on morphology and structural botany in botanical text books.

151. What is the characteristic difference between a bast cell and a wood cell?

152. Describe the arrangement of the fibro-vascular bundles in a palm and state how it differs from that observed in the oak?

153. What is a mericarp?

154. What is a legume, and name one that is official? (U. S. P., 1890.)

155. Describe a pepo and name one that is official? (U. S. P. 1890.)

156. Describe a panicle, and name one that is official. (U. S. and Br.)

157. Describe a berry, and name those that are official (U. S. P., 1890)

158. Describe a utricle and name an official specimen.

159. What is the principal characteristic of the fruits of the umbelliferæ? and name some official specimens.

160. Where is the milk juice of plants found, and what milk juice is official?

The Interstate League.

At the meeting held Friday, June 15, the New York county branch of the Interstate Retail Druggists' League went through the ceremony of installing officers to serve during the coming year. Beyond this, little of interest transpired. The secretary read a letter from President Canning, which contained many references to the successful work of the League in organizing druggists throughout the country. With regard to the "vaseline" controversy Mr. Canning suggested that the New York branch act as an independent association and request the indorsement of other associations at its own option. This he recommended to be done during the interval which must elapse before the presentation of the resolution at the next convention of the national body.

President Rontey then read the following letter which he had forwarded a few days previous to Mr. Canning:

NEW YORK, June 11, 1894.

To Mr. Canning, President of the Interstate Retail Druggists' League:

DEAR SIR: At the last meeting of the "New York Branch of the Interstate Retail Druggists' League" it was moved, and adopted, that I should communicate with you and state such views as in my opinion would most likely bring about the accomplishment of the League Plan.

In view of the multiplicity of plans that have been offered and of those that have been tried, it becomes an impossibility to offer anything really new, or any modification of them promising sure success; at best only exposition of objectionable features of the present plan can be expected, and such modification as may promise aid to a difficult undertaking.

As you are doubtless aware our success up to the present in recruiting members has been but indifferent. Instead of rallying to their interests and coming in readily at the first call a considerable number of druggists have kept aloof from the league and many of those whose names appear on our roll not only do not attend our meetings, but do not seem disposed to pay their dues.

As our first year is now over and dues for a second are in order it is feared that the number on our roll will greatly diminish. How to prevent this and from the number that do pay to meet our expenses and pay our quota to the general league is the problem now confronting us.

Of over 450 names on our roll we cannot claim this number as representing our real strength now, although should we be able to assure success this number would doubtless prove valid.

The stand the New York branch took relative to the "Vaseline" incident has brought us a number of new members and woke up some of the slothful ones, and will probably bring us some more; but for all that the situation calls for something still more effectual if we would succeed or even outlive another year.

It is my conviction that the proprietors of patent medicines should be aroused to an appreciation of the danger threatening their business and to remedy their fault at the outset of the cutting evil by taking an active hand in our effort to rehabilitate their now re ciated goods and not leave us struggling for the needed 80 per cent. stipulated in the Chicago plan.

Should we fail—and an effort like ours if not successful at its first impulse, according to all teachings of experience, generally falls through—the patent medicine people will be the greatest losers, for, as I have suggested, the League could adopt and patent a label of its own and replace with its own equivalent preparations all the familiar nostrums; as has already been done by some of the original cutters who made cutting but a cheap advertising means to finally introduce their own preparations. See Riker's list; Macy's sarsaparilla, expectorant, emulsion of cod liver oil, etc., etc., and Bloomingdale's full list of some doctor's remedies.

Owners of patent medicines should not be blind to the fact that if New York cannot restore reasonable prices on their goods, prices will not be kept up throughout the country for any length of time, as no branch of the League will be able to maintain itself if New York remains open to the enemy, any more than an army can avoid defeat when its center is routed.

I would suggest that the patent medicine people lower the percentage required by the Chicago plan to simply a sure majority (as 80 per cent. is too difficult to attain here), or to put the wholesale price of their medicines to retail druggists up to the full retail price for a season, with the proviso that only members of the League shall be allowed a commission on their sale, and that only when the League has for membership the required 80 per cent. of its members.

If either of these two propositions should be adopted I feel confident that the New York branch of the League can promise success; if not, it is possible that the present members may consider the patent medicine branch of their business as not worth further labor.

Leaving to you to pass upon the practicability or impracticability of the above propositions, with full confidence that you will do whatsoever you can to aid us to success, I remain,

Very respectfully yours,

A. M. RONTEY.

T. B. Breen addressed the association in advocacy of the appointment of an attorney, to whom might be referred all legal questions that might come up, and finally made a motion to the effect that an attorney be selected for appointment as legal adviser. Mr. Searles thought it would be better to refer the matter to a committee and offered an amendment to that effect. This was adopted and Messrs. Breen, Erb and Utley were appointed a committee of three to consider the advisability of appointing an attorney to the League.

After transacting some routine business the meeting adjourned. The next meeting will be held in the Mott Memorial Hall, 64 Madison avenue, on Friday, July 6, at 3 P.M.

Kings County Pharmaceutical Society.

This society held the last regular meeting of the season on Tuesday, June 12.

After the transaction of routine business, consisting largely of reports of officers and committees, the announcement of new committees for the coming year was made.

A delegation was appointed to attend the meeting of the New York State Association at Saratoga, consisting of Edward Alt, Wm. P. De Forrest, Adrian Paradis.

An interesting report was received from the delegation attending the New Jersey State Association held at Asbury Park, May 23 and 24, Wm. M. Davis, D. L. Cameron, and Professor Schimpf attending.

The committee on matters pertaining to pharmacy reported through F. H. Pamphilon. He had turned his attention to some things in which druggists had to meet competition from all points, and selected first that of "Ammonia" as obtained from department stores and grocers.

Twenty-four samples had been obtained in different parts of the city of Brooklyn, the prices ranging from 3 cents to 24 cents per bottle, and bottles varying from 9 to 15 fluid ounces capacity, and having

many titles, as "Champion" "Laundry" "Reliable," "Pure," *ad infinitum*.

One bottle, bought for 10 cents, proved to contain 15 per cent of NH_3, (quite evidently a mistake of the bottler). Another was found which showed 12.75 per cent. The line, however, ran from 9.9, 9.35, 9.30, 9.00, 8.00, 7.80, 6.00, 5.30, 5.00, 4.80, 4.00, 3.80, 3.15, 3.00, 2.80, 2.30, 1.84, and a total average of 6.30 per cent.

Professor Schimpf used this report as an example of the simplicity of modern volumetric analysis, by which method Mr. Pamphilon had finished this line of samples in a far shorter time than possible if NH_3 had been brought to a salt and determined gravemetrically.

The plan was applicable not only to acids and alkalies, for which, if not tested, we are absolutely dependent for strength upon the label, but for many salts, as silver nitrate, rochelle, and epsom salts; for lime juice, solution of soda, solution of potash, the last three being examples of much handled and well known materials, of which nothing can be known except by testing. The starting principle being that an alkali will neutralize an acid, as every boy knows, then with determined strength of an alkaline solution, a given amount of that which has saturated an acidulous substance in solution, will show the strength of the latter, and *vice versa*. To show when that saturation is accomplished instead of trying many times with litmus paper, we add a drop or two of litmus solution to the liquid being tested, or of a solution of phenolphtalein, the change in color showing the saturation point.

Some seemed to think a burette to be a most dangerous article to have on hand, while it is really only an accurate *graduate turned upside down*, and costing but little more than a good graduate, and in using it, a man need have no knowledge of chemistry whatever, as the tables in the Pharmacopœia of 1890 give for each Cc. of acid solution used, the percentage result of the alkali being tested for.

O. A. A. Rouillion offered a method of exhibiting creosote in pills and showed samples, which proved very neat:

Creosote .....m. xx
Sodium benzoate.....gr. xl

Mix well and make into pills No. xx, no excipient being needed.

Under "Trade Matters" Luther F. Stevens read a paper entitled "What I know about Vaseline." This paper was printed in the June 14 issue of THE AMERICAN DRUGGIST. He supported his statements by referring to old records of the society and by a line of advertisements and circulars issued by the vaseline proprietors during a series of years. Mr. Stevens also gave a table of melting points and other data determined on July 9 and 11, 1890, of four samples of vaseline and petroleum purchased recently from retailers.

A. "Blue seal vaseline," purchased from wholesaler several months ago.

B. White label vaseline, from a ½ lb. round tin can, originally from the wholesaler about two years ago. (The bottom of the lot taken.)

C. Vaseline "No. 1," in pasteboard, regular carton, with print on top. Fine vaseline, size No. 1. Price in the United States 15c.; price in England 6 pence, containing a one ounce bottle with red seal and wrapped in a paper having on one side the price lists at that time put out, and on the reverse side the circular dated Dec. 26, '93, and another of "Caution."

Original date of the package unknown, except from above data.

D. Petrolatum of light color, opaque, in one ounce bottle.

Maker and original purchaser of bulk lot unknown.

Sample.	Began to yield.	Soft.	Melting point.	After 10 minutes at this were all flowing freely.	Ten minutes at this heat, all were thin and clear.
A.	91.	94.	97.	97. Medium.	100. Thickest.
B.	89.	93.	95.	97. Thinnest.	100. Thinnest.
C.	91.5	94.	95.5	97. Thickest.	100. Medium.
D.	92.	104.	108.	113.	115.

Equal weights of 5 grammes from each sample were subjected to the same conditions at the same time. Temperature is in Fh. by a thermometer of known variation. The figures are the result of all corrections and averages after two distinct trials of June 9, evening, and June 11 A. M.

Those present who had been in business during this time and knowing of the matters spoken of, said that the paper read and the running comment could well have been much stronger and still been far within the truth, as tests had been made before at different times and exhibited at society meetings.

Under the title "Recipes," the Charles E Hires Co. of Philadelphia have issued a very useful little book of formulæ. Recipies are given for the manufacture of flavoring extracts, handkerchief extracts, toilet water, cologne, bay rum, etc., etc. The book is published at $1 and can be had through any dealer.

The Modern Drink.

Some two years ago Sir William Jenner, Queen Victoria's physician, recommended Her Majesty to stop drinking claret and champagne and substitute Scotch whisky and Apollinaris water, in the proportion of about four parts of water to one of whisky. It is said that the Prince of Wales tried the beverage and liked it so well that he adopted it, which was sufficient to insure a fashionable following in England, and now, whisky with effervescent water has become the fashionable modern drink everywhere.

There can be no question but what there is real merit in this prescription. As a rule, non-acid drinks agree with most people better than acid drinks, although the contrary view has been generally entertained. There can be no doubt but that good whisky is the purest and least hurtful of all stimulants, if diluted sufficiently, and, in the proportion of four parts of water to one of whisky, it is comparatively harmless, and our best American whisky, such as James E. Pepper's, is superior, for drinking cold, to Scotch or Irish whisky.

Sulphur as an Insecticide.

Leggett & Brother, 301 Pearl street, New York, who are manufacturers and patentees of a line of powder guns for distributing dry insecticides and fungicides, have issued an illustrated catalogue of these implements. The catalogue will be of value to druggists doing business in rural districts, as it contains a useful list of the machinery used in applying insecticides to vegetables, grapes, cotton, etc. One of the substances recommended for application to infested bushes, vegetables, etc., is "Flowers of Sulphur." This is the product of D. H. Gray, 113 Maiden Lane, New York, and should be distinguished from the ordinary flour sulphur, which is less useful in this application. D. H. Gray is headquarters in this country for the different preparations of sulphur and is the largest manufacturer of the sublimed variety.

A Delightful Sail.

A delightful sail is that furnished by the Old Dominion Line from this city to Norfolk, West Point or Richmond. The service is most excellent in all respects and this route gives the maximum amount of sea air with the minimum risk of the discomforts occasionally attending sea voyages. It is rarely that the ocean is so rough on the route selected by this line as to try the sailing qualities of the passenger.

Those who attended the Old Point Comfort meeting of the A. P. A. will recall with delight the voyage on the steamer and it is probable that many who contemplate visiting Asheville this fall will desire to make a portion of the journey over this route, which will take them past the historic spot where the Monitor proved to the world the fighting efficacy of the new departure in naval architecture.

A Curious Law Suit.

What is probably the most curious and peculiar lawsuit ever inaugurated in an American court of law has just been commenced in the United States Circuit Court by the city of Carlsbad in Bohemia, against the firm of Kutnow Brothers of 52 Lafayette place, New York City. The firm here are the American branch of the London house of the same name, and are engaged in the introduction in this country of what is called 'Kutnow's improved effervescent powder." As put up, this preparation bears an engraving of what is called the "Hirschensprung," or deer leap," a well known public object of Carlsbad. The city of Carlsbad makes the claim that Kutnow Brothers make and sell Carlsbad salts and water in violation of its charter rights, and on this basis the lawsuit referred to is brought. The accompanying cut is an exact reproduction

of the label used by Kutnow Brothers, and from it our readers can gain an idea as to the grounds of complaint.

Lawyers here do not at first know what to make of the announcement that such a suit has been brought. But we are able to present in our columns some interesting extracts from an English newspaper, showing how the same matter was in litigation in English courts for three years, with the result that the city of Carlsbad was defeated. Good legal authorities who have looked at the matter in the light of this information from the other side say that there is certain to be a similar ending to the case here. The London *Times* gives the following report of the case, which had been brought before the High Court of Justice, Chancery Division. Mr. Justice North—one of the most distinguished and brilliant jurists of Great Britain—tried the case and decided all points in favor of Mr. Kutnow. The *Times* says:

Mr. Justice North decided all points in favor of the applicant, Mr. Kutnow, and dismissed the appeal of the municipality, with costs. His Lordship had never heard that a person might not adopt as a trademark the picture of a well-known object that was the property of some one else. It might as well be suggested that a London tradesman could not properly use the device of the Tower because it was the property of the government; or that an Edinburgh shop-keeper might not place a picture of the Castle on his goods or wrappers. The "Rock and Chamois" were well known to be a public object at Carlsbad, and suggested the name of Carlsbad in connection with the powder, just as much as if the word had been spelt in eight letters. As showing that the effects of the trademark as a whole was not likely to deceive the public into the belief that the applicant's powder was a natural as opposed to an artificial product, his Lordship observed that the mark described the powder as improved and effeevescent. Mr. Kutnow's powder was improved, for it contained an addition which disguised or took away the nasty taste of the natural spring, and it was made effervescent, a quality that the natural salts did not possess.

The suit in the United States Court is for $20,000, but there is no likelihood whatever that the legal processes of the United States will ever help the city of Carlsbad to collect either that or any other amount on the grounds indicated.

Chemicals.

REVISED PRICES.

Rosengarten & Sons, manufacturing chemists, Philadelphia, in a circular issued under date of June 15, announce the following revision in prices:

Bismuth, metal	$1.60 per lb.
" " by 25 lbs.	1.50 "
" citrate	2.20 "
" " by 5 lbs.	2.15 "
" "	.15 per oz.
" " & ammon, soluble	2.20 per lb.
" " " by 5 lbs.	2.15 "
" " "	.15 per oz.
" " " solution	.15 per lb.
" nitrate crystals	1.25 "
" "	.10 per oz.
" oxide, hydrated	2.25 per lb.
" " "	.15 per oz.
" oxychloride	1.75 per lb.
" " by 25 lbs.	1.70 "
" salicylate	2.25 "
" "	.16 per oz.
" subcarbonate	1.85 per lb.
" " by 25 lbs	1.80 "
" subgallate	4.50 "
" "	.30 per oz.
" subiodide	3.00 per lb.
" "	.20 per oz.
" subnitrate	1.55 per lb.
" " by 25 lbs.	1.50 "
" tannate	2.25 "
" "	.15 per oz.
" valerianate	.35 per lb.
Chloral, hydrate, bulk	.85 "
" " 1 lb. g. s. b. incl.	.95 "
" " cryst., bulk	.90 "
" " " 1 lb. g. s. b. incl.	1.00 "
Cocaine, hydrochlorate, cryst., 1 oz. vials incl.	4.75 per oz.
Hydrogen, peroxide, U. S. P., bulk	.25 per lb.
" " " 1 lb c.b.incl.	.35 "
" " " ½ " " 7c.	.26 "
" " " ¼ " " 5c.	.26 "
Iron, citrate, U. S. P.	.57 "
" " and ammonia	.53 "
" pyrophosphate, scales	.53 "
" " U. S. P.	.53 "
" phosphate, U. S. P.	.55 "
Acetate, muriate and sulphate of morphine, by 25 ounces or more,	
$2.20 per ounce, including ⅛ oz. vials in 1 oz. boxes.	
$2.15 per ounce, including ⅛ oz. vials in 2⅛ oz. boxes.	
$1.95 per ounce including 1 oz. vials.	
$1.90 per ounce in bulk.	
Potassium, citrate	$0.44 per lb.
Quinine and iron, citrate, U. S. P.	1.55 "
" " " " by 5 lbs.	1.50 "
" " " " soluble.	1.55 "
Quinine and iron, citrate, U. S. P. soluble by 5 lbs.	1.50 "
Sodium, citrate	.47 "
" salicylate	1.15 "
" " by 25 lbs.	1.10 "

Advance in Beef Extract.

The Cudahy Pharmaceutical Company have advanced the price of Rex Brand Extract of Beef, taking effect June 1, as follows:

2	ounce	size	from	$3.65	per doz.	to	$3.85
4	"	"	"	6.75	"	"	7.00
8	"	"	"	12.65	"	"	13.00
16	"	"	"	23.65	"	"	24.00
5 lb. tin			"	8.50 each		"	8.75

The Cleves Drug Company were incorporated at Albany on the 8th inst. to conduct a wholesale and retail drug business in Binghamton; capital, $5,000. Directors: William B. Cleves, E. Christene Cleves, and Mary C. Norton of Binghamton.

Review of the Wholesale Market.

NEW YORK, June 20, 1894.

It should be understood that the prices quoted in this report are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a wide range of prices.

There is yet a notable absence of important demand in the several departments of drugs, dyestuffs and chemicals, and importing houses do not report any increase in the receipt of orders for original packages. Speculative interest is still of a very tame character, buyers evincing a disposition to proceed in a slow and cautious manner. The market taken as a whole is fairly steady, and the outlook for the summer trade is regarded as favorable. Prices are fairly well sustained with few changes of importance to note. Acetic acid has declined and the breakdown in price of the metal bismuth has resulted in a lower range for its preparations. Gum arabic, sorts, is hardening. Opium has reacted and is now in improved position both here and abroad.

ADVANCED.	DECLINED.
Opium.	Soap bark.
Caffeine.	Bismuth salts.
Menthol.	Morphine.
Canary seed.	Spanish saffron.
	Senega root.

ALCOHOL is without change, the Trust range remaining $2.18 @ $2.22 with the usual discount.

ARNICA FLOWERS have continued quiet and the market has an easy appearance with 9 @ 10c. quoted.

BALSAMS.—There continues a dull market for all descriptions, though no quotable change is reported. A lot of 25 cases Tolu just arrived has been disposed of on private terms. Canada fir is easier, with spot supplies obtainable at $2.50.

BARKS have shown no action of special importance. Cascara sagrada held at 5½ @ 6¼c., with 5 @ 6c. bid; elm 10½ @ 12c.; sassafras 6½ @ 7c.; soap offers at 3½c. for whole and 4c. for cut and crushed.

BISMUTH PREPARATIONS have undergone a material reduction following the recent fluctuations in price of the metal. The cut amounts to a reduction of 45c. per lb. all around. A list of manufacturers' quotations is given in another column.

BUCHU LEAVES have found a very limited sale during the week, though holders maintain their limits at 8 @ 9c. for short. Long is almost out of market and quotations are nominal.

CAFFEINE is scarce upon spot and for the limited quantity available $2.30 @ $2.40 is asked.

CACAO BUTTER, Dutch bulk, continues very quiet and the market has an easy appearance. Sales have recently been made at 31c., though 31½c. is generally quoted as inside.

COD LIVER OIL, Norwegian, is meeting with a satisfactory jobbing inquiry, numerous small sales being reported at the range of $26 @ $27. Prime Lofoden has sold to the extent of 100 bbls. at $27.

CUTTLE BONE, Trieste, is inquired for to an increased extent, and we are reported numerous sales at the range of 8½ @ 8¾c. as to quantity.

ERGOT continues very dull and prices are nominally unchanged.

GUARANA continues to experience a steady, fair inquiry and we are reported numerous sales of quantity lots. The jobbing quotations remain 90c. to $1.

LYCOPODIUM is yet held at 53 @ 56c., the latter for Pollitz.

MENTHOL continues to rule firm and an advance is reported abroad. Holders here are offering stock with less freedom, and $5.50 @ $5.75 is generally required.

MORPHINE, in curious contradiction to the tendency of opium, is lower, manufacturers having reduced their quotations as follows: bulk $1.90, ounces $1.95, and eighths $2.15 @ $2.20. Outside brands can be obtained at a lower range, say 20c. less than bulk.

OPIUM has strengthened a trifle during the week, but the market is yet in a very sensitive condition. Dealers here were surprised early in the week by the receipt of cable advices announcing an advance in the Smyrna market. The fact that no direct cables were received from either Smyrna or Constantinople (the information sent having come through London) was regarded as a singular feature and gave an uncertain tone to the market. The advices referred to were confirmed later by cables from Smyrna advising an advance in the price of opium to 9s. "Opium is dead," is the laconic way in which the Constantinople correspondent of *Chemist and Druggist* describes the condition of the drug in that market. Quotations here are merely nominal Sales of single packages of high test goods have been made at $2.25 with $2.12½ @ $2.15 asked for ordinary quality. The price of jobbing quantities is now $2.15 @ $2.20 and for powdered the quotation is now $2.90 @ $3.

QUININE has sold to a moderate extent in jobbing quantities. Important interest in original packages is yet lacking, but the tone of the market is firm. Foreign is held at 22½ @ 23½c. as to brand and quantity, and the trade requirements are being met at this range.

SAFFRON, Spanish, continues dull and with freer offerings purchases can be made down to $5. for Valencia.

TONKA BEANS, Angostura, have been in demand and among other transactions we note a sale of 200 lbs. at $2.

DYESTUFFS.

CUTCH is maintained steadily at the previous range of 5⅞ @ 6c.

DIVI DIVI is in less abundant supply and with the stock under good control prices are maintained at 70 @ 75c.

GAMBIER continues quiet with the tone of the market easy. Steamer goods from store are offered at 3⅞c. and for sail stock in quantity 4 @ 4⅛c. is quoted as accepta-

ble. In a jobbing way up to 4½c. is asked.

NUTGALLS, Blue Aleppo, are quoted at 13 @ 14c. as to quantity, but important demand is absent.

SUMAC is in better supply and slightly easier with $67.50 @ $70 quoted for spot goods.

CHEMICALS.

ALUM is moving fairly in a jobbing way with the current sales of $1.75 for lump and $1.80 @ $1.85 for ground.

AMMONIUM CARBONATE is scarce and values are tending higher. Domestic in lots of 10 casks offer in some instances at 8c. Single cases are held at 8½c. We quote German 8¼c. and English 8½c.

ARSENIC, White, continues to find sale in a moderate way at the range of 3⅝ @ 3⅞c. as to brand and quantity.

ACETATE OF LIME continues in good demand, with the market firm at 90 a 95c. for ground, and $1.60@$1.65 for grey.

BRIMSTONE, crude seconds, continues very quiet, parcels to arrive quoted $16.25 @ $16.50, and forward shipment $15.75 @ $16.

BLEACHING POWDER continues quiet, without, however, any quotable change in price. The market appears to be steady upon the basis of 2⅛c. for German, and 2¼@2½c. for English, as to quantity.

BLUE VITRIOL is in good demand and with only a moderate supply available holders continue to ask 2⅜@3c. as to quantity.

BORAX shows no action of any consequence. The price remains 8¼ @ 8½c. for refined, and 7½ @ 7¾c. for concentrated.

CHLORATE OF POTASH is jobbing at 13½ @ 13¾c. for German and English, respectively. Powdered is held at 14c. The demand is generally restricted to small and unimportant lots.

CREAM TARTAR, powdered, is a trifle unsettled, and some outside holders are quoting down to 17¼c. The nominal range is 17½ @ 18c.

NITRATE OF SODA shows no action of any consequence, but the market remains steady at $2.22½ @ $2.30 as to quantity.

OXALIC ACID is quoted 6⅝ @ 6¾c. for German and English. There is, however, very little inquiry at the moment.

SAL AMMONIAC, White grain, is scarce and firm at 6⅞ @ 7c. for English and German.

SAL SODA, English, is generally held at 90 @ 95c., but domestic is obtainable at 80 @ 85c., less the usual discount.

TARTARIC ACID continues selling in moderate quantities at 21½ @ 22c. for crystals and 22 @ 22½c. for powdered.

ESSENTIAL OILS.

ANISE continues in moderate inquiry and prices are fairly well sustained at the previous range of, say, $1.50 @ $1.55.

BERGAMOT, Sanderson's, has been reduced to $2, but the decline has not resulted in any material increase in the distribution.

CASSIA continues to offer at 82½ @ 85c. for native though only small parcels are reported as changing hands.

CLOVE is finding sale in a small way at 52 @ 60c. for bud and 50 @ 52½c. for stem.

CUBEB is dull, but prices are nominally unchanged, the quotations remaining $1.35 @ $1.45.

LEMON is reported as moving in a very limited way at 80c. @ $1.35 as to brand.

ORANGE is meeting with moderate inquiry, but prices are nominally unchanged.

PEPPERMINT, bulk, has been more actively inquired for, and among other transactions we notice a sale of 500 lbs. for export on private terms. The quotation of the market ranges from $2.30 @ $2.60 as to quality. HGH remains quiet here, with $3 the nominal price.

GUMS.

ALOES, Curacao, in boxes continues scarce and firm at 3 @ 3¾c.

ARABIC, sorts, are wanted and values are hardening with 10½ @ 11c. quoted firm for the small available supply.

ASAFETIDA is held at previous values, and a moderate jobbing inquiry is experienced; quoted 22 @ 25c.

CAMPHOR, refined Japanese, is a trifle unsettled and forward delivery goods are offering at low values. Domestic is offering in some instances from the outside at 39½ @ 40½c. for bbls. and cases. Japanese is held at 39¼c.

CHICLE is showing some indications of firmness without, however, any quotable change in value. In most instances 26 @ 27c. is asked and it is difficult to shade the inside figure.

SENEGAL continues quiet though importers do not show any disposition to increase the distribution by making price concessions.

SHELLAC continues quiet. The present purchases are mainly for consumptive purposes and with the view of covering present wants. Prices are without quotable change.

ROOTS.

ALKANET is generally held at 6¾ @ 7c., but 2,000 lbs. changed hands the other day for a consideration of 6c.

IPECAC continues to sell in a small way at the range of $1.10 @ $1.20 as to quality.

JALAP is maintained at, 9 @ 20c. for prime grades though buyers' ideas are below this range.

SARSAPARILLA, Mexican, is in good demand for export, but the stock here is of small proportion and business is therefore restricted; jobbing sales are making at the range of 9½ @ 10c.

SENEGA is quoted lower from the West, holders there offering round parcels at 33c.

SNAKE continues held at 30c. though there is little or no inquiry for the article at the moment.

SEEDS.

ANISE continues in moderate demand with the current sales at 8½ @ 10c. for Italian.

CANARY, Smyrna, is firmer, and prices have advanced, 2⅝ @ 2¾c. being generally asked.

HEMP, Russian, is firmer, better reports from primary sources elevating the ideas of holders.

MUSTARD is quiet, and the same may be said of other descriptions.

PAINTS, OILS AND COLORS.

WHITE LEAD.—Dry lead is taken with indifference; carload lots have been sold in a few instances at 4¾c. with the usual discount for cash. Lead in oil has been in good demand, but the volume of business is hardly up to the average for the season. Dry lead is quoted at 4¼c. and lead in oil 5c. for original packages, these prices being subject to the usual trade discount.

RED LEAD is without important change, and the condition of the market is much the same as it has been for several weeks. Some holders are offering single ton lots at 5¾c. net cash, and some are of opinion that even this price could be shaded upon a firm bid.

LITHARGE.—A few unimportant orders have been placed for low grade goods, but the market is dull and weak.

ORANGE MINERAL continues dull, and while prices are not positively lower, they still lean more or less in buyers' favor.

ZINCS, foreign, are somewhat irregular in price, with German quoted as low as 5c. for future delivery.

COLORS, etc., are without important change, and business is confined to small nnd unimportant transactions.

LINSEED OIL is meeting with better sale, and the product is under better control with prices very firm throughout. Western and Eastern brands are quoted 1c. higher.

SPIRITS TURPENTINE is nominally unchanged, and we quote the range at 30@ 30¾c.

Druggists' Exchange.

Suitable notices of moderate length under this heading inserted one time free; for each additional insertion Fifty Cents. Write distinctly, on one side of paper only, and do not use postal cards.

POSITIONS VACANT.

WANTED.—A drug clerk with 6 to 8 years' experience; location western New York State. Full particulars may be learned by addressing "Quinine," 202 Delaware avenue, Buffalo. N. Y.—25.

CLERK WANTED, neat, accurate and quick, with city experience; salary to begin with moderate; good chance for advancement; state salary wanted and experience. Address "New Store," care this office.

POSITIONS WANTED.

WOULD like to correspond with patent medicine companies to do advertising in large or small towns or certain territory in Western New York at reasonable rates. Address Arthur H. Hitchcock, Mayville, N. Y.—25.

LICENSED PHARMACIST, experienced in prescription work and manufacturing; good salesman; first-class recommendation; desires position with a druggist who has a good retail trade or to manage. Address "339," care of this office.—26.

SITUATION WANTED as clerk in drug store, Arkansas preferred; have had four years' experience; best reference; can furnish a few hundred dollars if desired. Address "Phenacetine," care of this office.—26.

POSITION WANTED.—Drug clerk, aged 26, over three years in the business, at liberty June 20, wants a place in a pharmacy doing a good prescription business. J. H. E., Box 40, Meredith, N. H.—24.

WANTED.—Situation either in store or as salesman, by pharmacist licensed in Connecticut; has had experience with trusses and surgical instruments. Address. Address Lock Box 327, Thompsonville, Conn.—24.

DRUGGIST who has traveled the eastern part of Pennsylvania quite extensively will represent wholesale house or specialties in above territory on commission; best references given. Address "Hustler, care of this office.—24.

POSITION WANTED by a graduate of the Brooklyn College of Pharmacy; registered in New York and New Jersey; six (6) years' practical experience; city or country; age 28; can furnish best of references. Address "Competent," care this office.—24.

SITUATION WANTED.—An experienced salesman and detail worker among druggists and physicians; 10 years on the road. John H. Nelson, M.D., Bangor, Mich.—24.

DRUG CLERK, relief, has 2 days open. Address "Graduate," 559 Clinton street, Brooklyn.—24.

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